

REMARKS

Claims 1-16 are pending, with claims 1 and 11 being independent. Claims 1-5 and 11 have been amended, and claims 14-16 have been added. Support for the amendments and the new claims can be found in the originally-filed specification, at least at page 4, line 4, to page 5, line 29; in the originally-filed claims; and in Fig. 1. No new matter has been added.

Independent claim 1 recites a nozzle of a laser processing head for laser cutting and laser welding. The nozzle includes a laser beam outlet, a first gas supply channel, and a second gas supply channel. The laser beam outlet is for directing a laser beam towards a processing location of a workpiece to be processed. The first gas supply channel is for supplying a cutting gas towards the processing location of a workpiece to be processed when the laser processing head is used for laser cutting. The second gas supply channel is for supplying a welding gas towards the processing location of a workpiece to be processed when the laser processing head is used for laser welding. The nozzle also includes an inner sleeve through which the laser beam passes, and an outer sleeve surrounding the inner sleeve. A first annular cavity is defined between the inner sleeve and the outer sleeve and the outer sleeve defines a second annular cavity arranged essentially concentrically with the first cavity.

Independent claim 11 recites a method for laser processing of a workpiece. The method includes directing a laser beam through an inner sleeve of a processing nozzle of a laser processing head to a processing location of a workpiece. The method also includes supplying a cutting gas towards the processing location through a first gas supply channel of the nozzle and through a first annular cavity defined between the inner sleeve and an outer sleeve that surrounds the inner sleeve when the laser processing head is used for laser cutting. The method further includes supplying a welding gas towards the processing location through a second gas supply channel of the nozzle and through a second annular cavity defined within the outer sleeve and being essentially concentric with the first annular cavity when the laser processing head is used for laser cutting.

Claims 1-7 and 11-13 have been rejected as being allegedly anticipated by GB 2 163 692 (Johnson). Applicant requests withdrawal of this rejection because Johnson fails to describe or

suggest a nozzle having a second cavity defined by an outer sleeve and being concentrically arranged with a first cavity that is defined between an inner sleeve and the outer sleeve, where the outer sleeve surrounds the inner sleeve, and a laser beam passes through the inner sleeve.

Johnson relates to a gas nozzle 15 having a first nozzle 20 through which a laser beam 22 passes, and a second nozzle 24 that surrounds the first nozzle 20. See Johnson at page 1, lines 94-115, and Fig. 2. An aperture 25 is defined between the first nozzle 20 and the second nozzle 24. See Johnson at page 1, lines 107-115 and Fig. 2. However, while Johnson's nozzle 15 includes the aperture 25 between the first nozzle 20 and the second nozzle 24, Johnson's nozzle 15 does not include another aperture defined by the second nozzle 24 and being concentric with the aperture 25. Rather, as Johnson explains, the gas inlet 23 opens into the space defined within the first nozzle 20. See Johnson at page 1, lines 101-107 and Fig. 1.

For at least this reason, claims 1 and 11 are allowable over Johnson. Claims 2-7, 12, and 13 depend from claims 1 or 11, and are allowable for at least the reason that claims 1 and 11 are allowable.

Claims 8-10 have been rejected as being allegedly obvious over Johnson in view of U.S. Patent No. 5,308,951 (Mori). Claims 8-10 depend from claim 1, which was rejected as being anticipated by Johnson. Mori fails to cure the deficiencies of Johnson to describe or suggest a nozzle having a second cavity defined by an outer sleeve and being concentrically arranged with a first cavity that is defined between an inner sleeve and the outer sleeve, where the outer sleeve surrounds the inner sleeve, and a laser beam passes through the inner sleeve. In Mori, a nozzle 11 is designed with a single gas supply section 9 that feeds an auxiliary gas 10 into the nozzle 11. See Mori at col. 2, lines 25-34 and Fig. 1. However, Mori's nozzle 11 does not include a second gas supply section or a sleeve apart from the wall of the nozzle 11 that is shown in Fig. 1 of Mori. See Mori at Fig. 1. For this reason, claim 1 is allowable over any possible combination of Johnson and Mori. Claims 8-10 are allowable for at least the reasons that claim 1 is allowable.

New claims 14-16 depend from claims 1 or 11, and are allowable for at least the reasons that claims 1 and 11 are allowable.

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In conclusion, applicant submits that all claims are in condition for allowance, and requests that the Examiner reconsider and withdraw all pending rejections.

Applicant has enclosed a Petition for an Extension of Time and a check for \$1020 for the three-month extension of time fee. Please apply any other charges or credits to deposit account 06-1050, referencing Attorney Docket No. 15540-023001.

Respectfully submitted,

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